What is claimed is:

1. A sensor element for a sensor device, the sensor element comprising: a substrate;

a pair of proof masses that are attached to the substrate at fixed anchor points,

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the pair of proof masses suspended above the substrate; and
a set of drive beams positioned between the proof masses and the anchor
points, the drive beams having a longitudinal body portion that extends
along a first direction and a flexible spring member that extends along
a second direction, the second direction being perpendicular to the first
direction;

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wherein the flexible spring members of the drive beams are serpentine in shape.

- 2. The sensor element of claim 1 further comprising at least one base
 15 beam that interconnects the set of drive beams, the base beam having a second longitudinal body portion that extends along the second direction and a second flexible spring member that extends along the first direction.
- The sensor element of claim 2, wherein the second flexible spring member of the base beam is serpentine in shape.
 - 4. The sensor element of claim 1, wherein the substrate is made of glass and the proof masses and drive beams are made of silicon.

- 5. The sensor element of claim 1, wherein the sensor element is used in sensing an externally induced angular rate in a gyroscope.
- 6. The sensor element of claim 1 further comprising a first pair of
 5 electrode combs that drives the proof masses in a first plane.
- 7. The sensor element of claim 6 further comprising a second pair of electrode combs and a pair of out-of-plane electrodes, the second pair of electrode combs capable of sensing the movement of the proof masses in the first plane, the pair of out-of-plane electrodes capable of sensing the movement of the proof masses in a second plane, the second plane being different from the first plane.

8. A sensor element for a sensor device, the sensor element comprising: a substrate;

a pair of proof masses that are attached to the substrate at fixed anchor points, the pair of proof masses suspended above the substrate;

a set of drive beams positioned between the proof masses and the anchor points, each drive beam having a first longitudinal body portion that extends along a first direction and a first flexible spring member that extends along a second direction, the second direction being

perpendicular to the first direction; and

at least one base beam that interconnects the set of drive beams, the base beam having a second longitudinal body portion that extends along the second direction and a second flexible spring member that extends along the first direction.

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- 9. The sensor element of claim 8, wherein the first flexible spring members of the drive beams are serpentine in shape.
- The sensor element of claim 8, wherein the second flexible springmember of the base beam is serpentine in shape.
 - 11. The sensor element of claim 8, wherein the substrate is made of glass and the proof masses, drive beams, and base beam are made of silicon.

- 12. The sensor element of claim 8, wherein the sensor element is used in sensing an externally induced angular rate in a gyroscope.
- 13. The sensor element of claim 8 further comprising a first pair ofelectrode combs that drives the proof masses in a first plane.
- 14. The sensor element of claim 13 further comprising a second pair of electrode combs and a pair of out-of-plane electrodes, the second pair of electrode combs capable of sensing the movement of the proof masses in the first plane, the pair of out-of-plane electrodes capable of sensing the movement of the proof masses in a second plane, the second plane being different from the first plane.

15. An electronic sensor comprising:

a digital processing unit; and

a sensor element, the sensor element comprising:

a substrate;

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a pair of proof masses that are attached to the substrate at fixed anchor points, the pair of proof masses suspended above the substrate;

a set of drive beams positioned between the proof masses and the

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anchor points, each drive beam having a first longitudinal body portion that extends along a first direction and a first flexible

spring member that extends along a second direction, the

second direction being perpendicular to the first direction; and

at least one base beam that interconnects the set of drive beams, the

base beam having a second longitudinal body portion that

extends along the second direction and a second flexible spring

member that extends along the first direction.

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- 16. The electronic sensor of claim 15, wherein the first flexible spring members of the drive beams are serpentine in shape.
- The electronic sensor of claim 15, wherein the second flexible spring member of the base beam is serpentine in shape.
 - 18. The electronic sensor of claim 15, wherein the substrate is made of glass and the proof masses, drive beams, and base beam are made of silicon.

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- 19. The electronic sensor of claim 15, wherein the sensor element is used in sensing an externally induced angular rate in a gyroscope.
- The electronic sensor of claim 15, wherein the sensor element further
 comprises a first pair of electrode combs that drives the proof masses in a first plane,
 the first pair of electrode combs receiving a signal from the digital processing unit.
 - 21. The electronic sensor of claim 20, wherein the sensor element further comprises a second pair of electrode combs and a pair of out-of-plane electrodes, the second pair of electrode combs capable of sensing the movement of the proof masses in the first plane, the pair of out-of-plane electrodes capable of sensing the movement of the proof masses in a second plane, the second plane being different from the first plane, the second pair of electrode combs and the pair of out-of-plane electrodes further capable of sending signals to the digital processing unit.

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